XPS One™ Service Manual

Model MTG24

Notes, Notices, and Cautions

NOTE: A NOTE indicates important information that helps you make better use of your computer.

NOTICE: A NOTICE indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

CAUTION: A CAUTION indicates a potential for property damage, personal injury, or death.

Model MTG24

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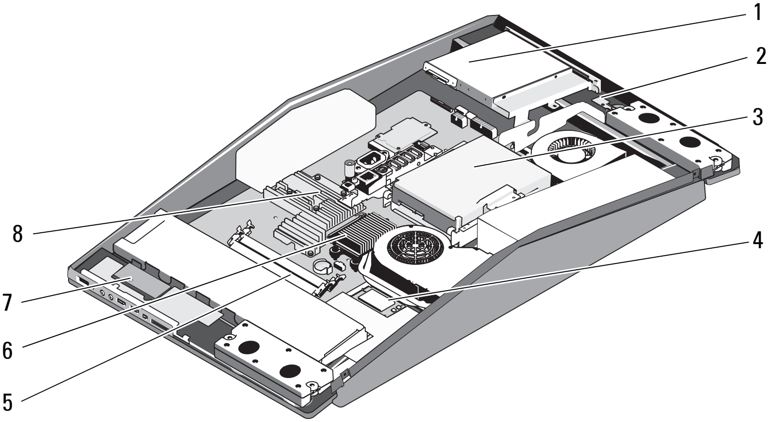
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1

Technical Overview

CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

Inside View of Your XPS One™ A2420 Computer



1	optical drive	2	internal card with Bluetooth® wireless technology
3	hard drive	4	WLAN card
5	memory modules	6	processor heat sink assembly
7	RF module	8	graphics card heat sink

2

Before You Begin

This chapter provides procedures for removing and installing the components in your computer. Unless otherwise noted, each procedure assumes that the following conditions exist:

- You have performed the steps in "Turning Off Your Computer" on page 9 and "Safety Instructions" on page 9.
- You have read the safety information that shipped with your computer.
- A component can be replaced or—if purchased separately—installed by performing the removal procedure in reverse order.

Recommended Tools

The procedures in this document may require a small Phillips screwdriver.

Turning Off Your Computer

NOTICE: To avoid losing data, save and close all open files and exit all open programs before you turn off your computer.

1. Shut down the operating system.
2. Ensure that the computer and all attached devices are turned off. If your computer and attached devices did not automatically turn off when you shut down your operating system, press and hold the power button for about 4 seconds to turn them off.

Safety Instructions

Use the following safety guidelines to help protect your computer from potential damage and to help to ensure your own personal safety.

CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

NOTICE: Only a certified service technician are authorized to remove the computer cover and access any of the components inside the computer. See the safety instructions for complete information about safety precautions, working inside your computer, and protecting against electrostatic discharge.

NOTICE: When you disconnect a cable, pull on its connector or on its pull-tab, not on the cable itself. Some cables have connectors with locking tabs; if you are disconnecting this type of cable, press in on the locking tabs before you disconnect the cable. As you pull connectors apart, keep them evenly aligned to avoid bending any connector pins. Also, before you connect a cable, ensure that both connectors are correctly oriented and aligned.

NOTICE: To avoid damaging the computer, perform the following steps before you begin working inside the computer.

1 Ensure that the work surface is flat and clean to prevent the computer cover from being scratched.

2 Turn off your computer (see "Turning Off Your Computer" on page 9).

NOTICE: To disconnect a network cable, first unplug the cable from your computer and then unplug the cable from the network device.

3 Disconnect all telephone or network cables from the computer.

4 Disconnect your computer and all attached devices from their electrical outlets.

5 Press and hold the power button while the system is unplugged to ground the system board.

NOTICE: Before touching anything inside your computer, ground yourself by touching an unpainted metal surface, such as the metal at the back of the computer. While you work, periodically touch an unpainted metal surface to dissipate static electricity, which could harm internal components.

3

Replacing the Computer Cover

⚠ **CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.**

⚠ **CAUTION: To guard against electrical shock, always unplug your computer from the electrical outlet before removing the cover.**

NOTICE: Ensure that sufficient space exists to support the system with the cover removed—at least 30 cm (1 ft.) of desk top space.

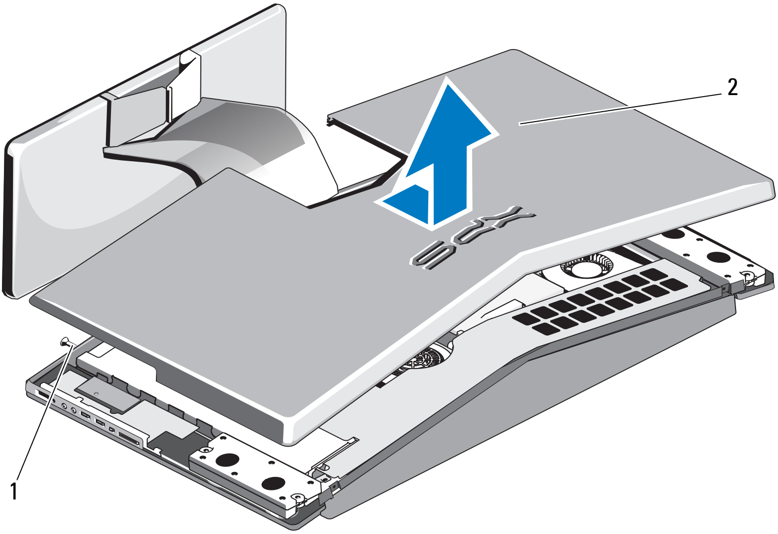
1 Follow the procedures in "Before You Begin" on page 9.

NOTICE: Before opening your computer, ensure that you place the computer on a soft cloth or clean surface to avoid any scratches on the display.

2 Place the computer face down on a flat surface.

3 Loosen the two captive screws securing the computer cover.

4 Slide the computer cover towards the top and lift it away from the computer.



1	captive screws (2)	2	computer cover

5 To replace the computer cover, ensure that all the cables are connected and that no tools or extra parts (including screws) are left inside the computer.

6 Pivot the cover down and into position.

7 Push the cover until it clicks into place.

8 Tighten the two captive screws that secure the computer cover.

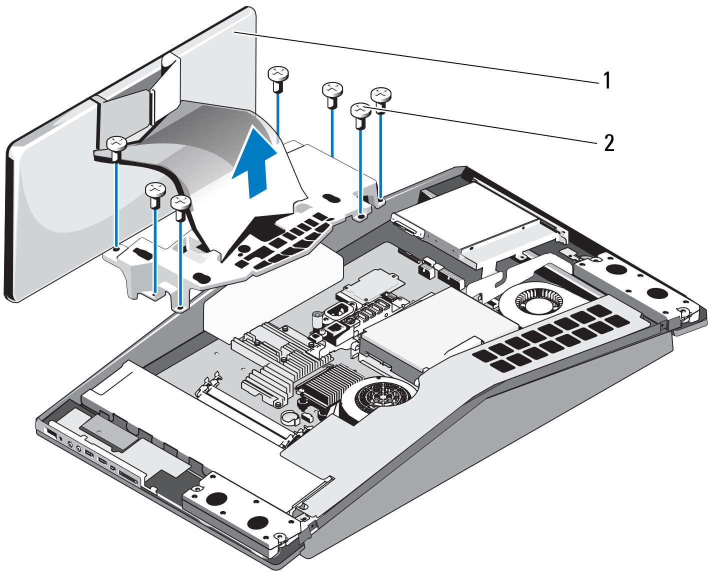
9 Connect your computer and all attached devices to electrical outlets, and turn them on.

4

Replacing the Stand

CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

1. Follow the procedures in "Before You Begin" on page 9.
2. Remove the computer cover (see "Replacing the Computer Cover" on page 11).
3. Remove the seven screws securing the stand and lift the stand away from the computer.



1	stand	2	screws (7)

NOTE: Ensure that you remove the labels from the existing stand and affix them on the new stand.

4 To replace the stand, align the screw holes on the stand with the screw holes on the chassis.
5 Replace the seven screws that secure the stand.
6 Replace the computer cover (see "Replacing the Computer Cover" on page 11).

5

Replacing the Top Shield

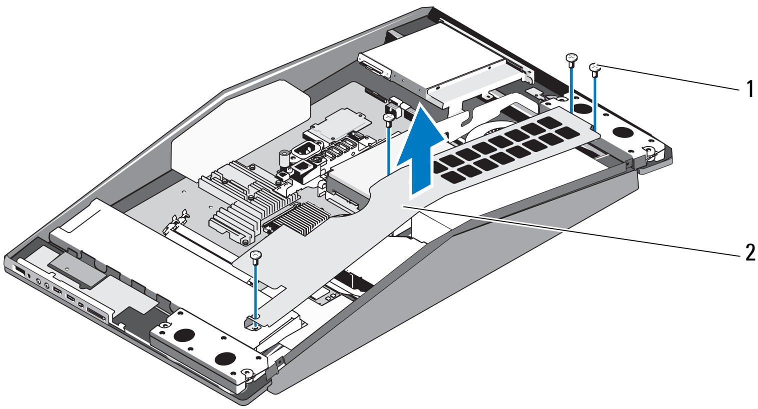
⚠ **CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.**

⚠ **CAUTION: Ensure that you disconnect the power cable before removing the top shield.**

1 Follow the procedures in "Before You Begin" on page 9.

2 Remove the computer cover (see "Replacing the Computer Cover" on page 11).

3 Remove the four screws securing the top shield and lift the top shield away from the computer..



1	screws (4)	2	top shield

4 To replace the top shield, align the screw holes on the top shield with the screw holes on the chassis.

5 Replace the four screws that secure the top shield.

6 Replace the computer cover (see "Replacing the Computer Cover" on page 11).

6

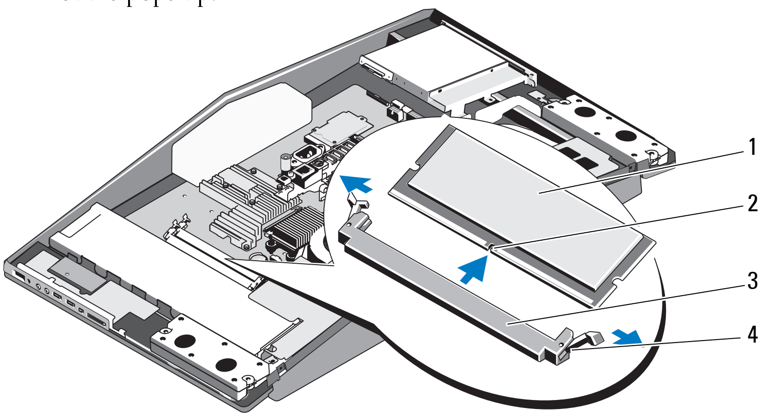
Replacing Memory Module(s)

⚠ **CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.**

1 Follow the procedures in "Before You Begin" on page 9.

2 Remove the computer cover (see "Replacing the Computer Cover" on page 11).

3 Push apart the securing clips on the memory module connector until the module pops up.



1	memory module	2	notch
3	memory module connector	4	securing clip (2)

4 To replace the memory module(s), align the notch on the memory module with the tab on the memory module connector.

NOTICE: If the memory module is not installed properly, the computer may not boot.

5. Insert the module into the connector until the module snaps into position.

   If you insert the module correctly, the securing clips snap into the cutouts at each end of the module.

6. Replace the computer cover ("Replacing the Computer Cover" on page 11).
7. Connect your computer and all attached devices to electrical outlets, and then turn them on.
8. When the message appears stating that memory size has changed, press <F1> to continue.
9. Log on to your computer.
10. Right-click the **My Computer** icon on your Microsoft® Windows® desktop and click **Properties**.
11. Click the **General** tab.
12. To verify that the memory is installed correctly, check the amount of memory (RAM) listed.

7

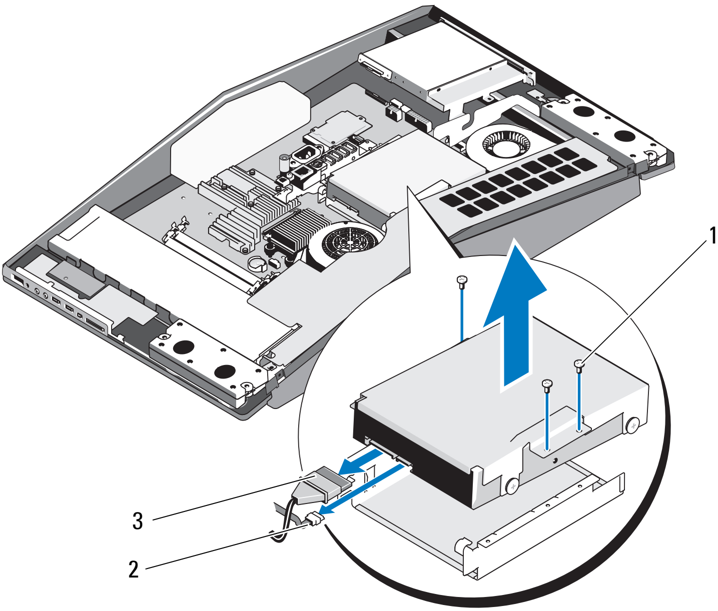
Replacing Drives

CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

Replacing the Hard Drive

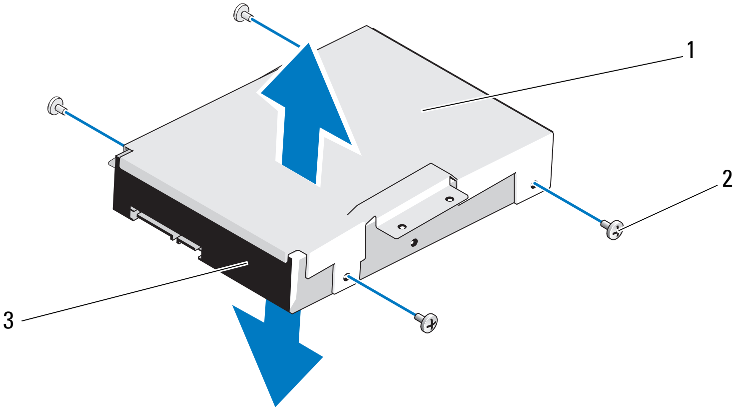
1. Follow the procedures in "Before You Begin" on page 9.
2. Remove the computer cover (see "Replacing the Computer Cover" on page 11).
3. Remove the three screws securing the hard drive carrier to the chassis.
4. Disconnect the hard drive power cable.

5 Press the release tab to disconnect the hard drive data cable and lift the hard drive carrier out of the chassis.



1	screws (3)	2	hard drive data cable
3	hard drive power cable		

6 Remove the four screws securing the hard drive to the hard drive carrier.



1	hard drive carrier	2	screws (4)
3	hard drive		

7 To install a new hard drive, prepare the new hard drive for installation and check the documentation that accompanied the drive to verify that the drive is configured for your computer.

8 Align the screws holes on the hard drive with the screw holes on the hard drive carrier.

9 Replace the four screws that secures the hard drive to the hard drive carrier.

10 Connect the hard drive data cable and power cable.

11 Align the screw holes on the hard drive carrier with the screw holes on the chassis.

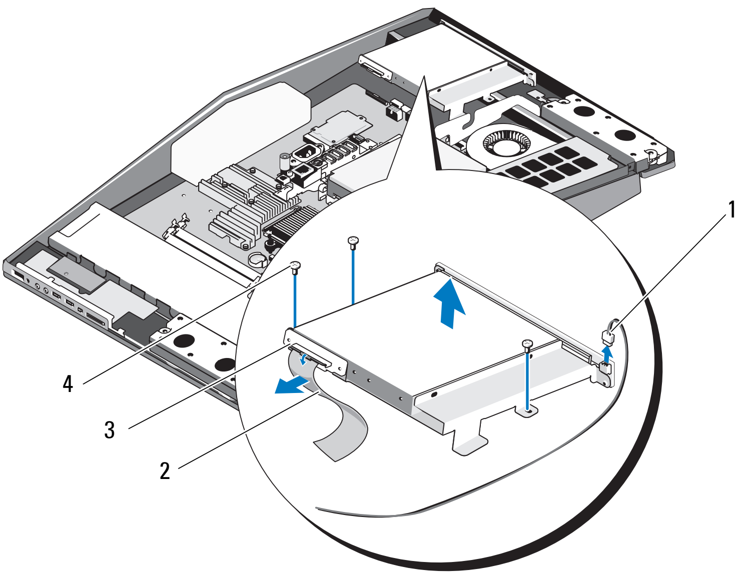
12 Replace the three screws that secures the hard drive carrier to the chassis.

13 Replace the computer cover (see "Replacing the Computer Cover" on page 11).

Replacing the Optical Drive

1 Follow the procedures in "Before You Begin" on page 9.

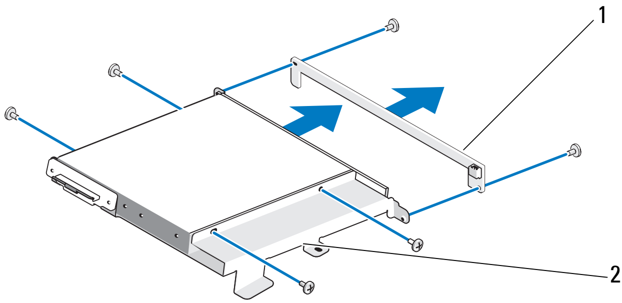
2 Remove the computer cover (see "Replacing the Computer Cover" on page 11).
3 Disconnect the optical drive lighting cable.
4 Push down the release lever on the optical drive data cable connector to disconnect the optical drive data cable.
5 Remove the three screws securing the optical drive carrier to the chassis and lift the optical drive carrier out of the computer.



1	optical drive lighting cable	2	optical drive data cable
3	optical drive data cable connector	4	screws (3)

6 Remove the four screws securing the optical drive to the optical drive carrier.
7 Remove the two screws securing the optical drive card to the optical drive.

8 Slide the optical drive out of the optical drive carrier.



1	optical drive card	2	optical drive carrier

9 To install a new optical drive, prepare the optical drive for installation and check the documentation that accompanied the drive to verify that the drive is configured for your computer.

10 Gently slide the drive into the optical drive carrier until it connects to the optical drive data cable connector.

11 Align the screw holes on the optical drive card with the screw holes on the optical drive, and replace the two screws that secure the optical drive card.

12 Align the screw holes on the optical drive with the screw holes on the optical drive carrier, and replace the four screws that secure the optical drive.

13 Align the screw holes on the optical drive carrier with the screw holes on the chassis, and replace the three screws that secure the optical drive.

14 Connect the optical drive data cable and pull the release lever on the connector upwards to secure the cable.

15 Connect the optical drive lighting cable.

16 Replace the computer cover ("Replacing the Computer Cover" on page 11).

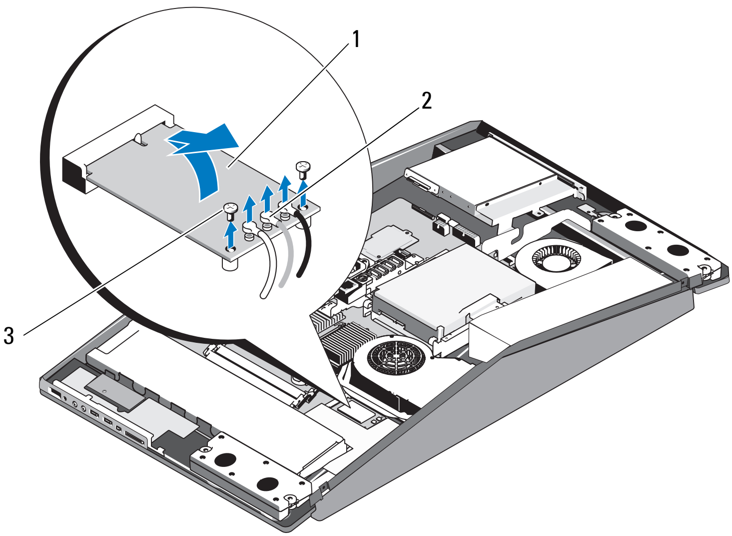
8

Replacing Cards

CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

Replacing the WLAN Card

1. Follow the procedures in "Before You Begin" on page 9.
2. Remove the computer cover (see "Replacing the Computer Cover" on page 11).
3. Remove the top shield (see "Replacing the Top Shield" on page 15).
4. Disconnect the antenna cables from the WLAN card and release the WLAN card by removing the two screws securing the card.
5. Lift the card out of its system board connector.



1	WLAN card	2	antenna cables (3)
3	screws (2)		

NOTICE: The connectors are keyed to ensure correct insertion. Use of excessive force may damage the connectors.

NOTICE: To avoid damage to the WLAN card, ensure that there are no cables under the card. Also, ensure to remove the antenna cables from under the card.

6 To install a new WLAN card, align the notch on the card with the tab in the connector slot.

7 Insert the WLAN card at a 45-degree angle into the system board connector.

8 Replace the two screws that secure the WLAN card.

9 Connect the appropriate antenna cables to the WLAN card you are installing. The WLAN card has three triangles on the label (black, gray, and white):

- Connect the black cable to the connector marked with a black triangle.
- Connect the gray cable to the connector marked with a gray triangle.
- Connect the white cable to the connector marked with a white triangle.

10 Replace the top shield (see "Replacing the Top Shield" on page 15).

11 Replace the computer cover (see "Replacing the Computer Cover" on page 11).

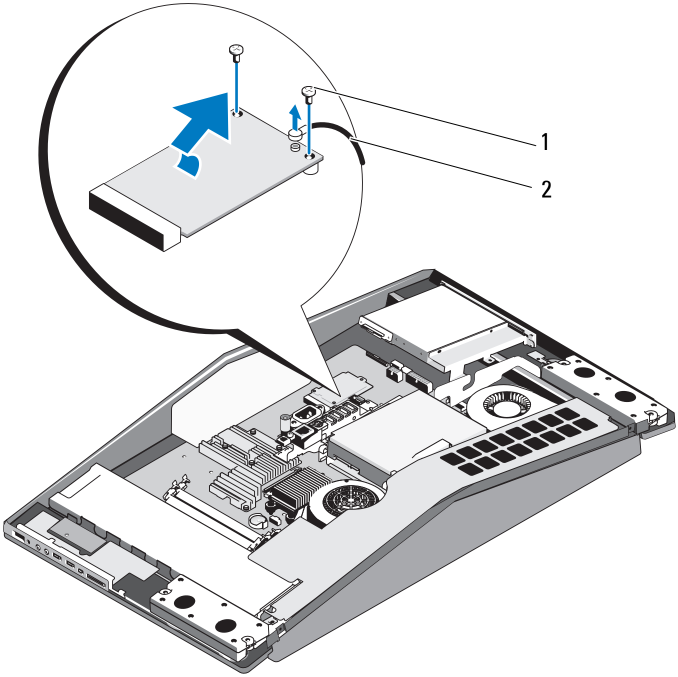
Replacing the TV Tuner Card

1 Follow the procedures in "Before You Begin" on page 9.

2 Remove the computer cover (see "Replacing the Computer Cover" on page 11).

3 Remove the stand (see "Replacing the Stand" on page 13).

4 Disconnect the TV tuner cable, remove the two screws securing the TV tuner card and lift it out of the system board connector.



1	screws (2)	2	TV tuner cable

5 To replace the TV tuner card, align the notch on the TV tuner card with the tab in the connector slot.

6 Insert the TV tuner card at a 45-degree angle into the system board connector.

7 Replace the two screws that secure the TV tuner card and connect the TV tuner cable to the connector on the card.

8 Replace the stand (see "Replacing the Stand" on page 13).

9 Replace the computer cover (see "Replacing the Computer Cover" on page 11).

Replacing the Graphics Card

1 Follow the procedures in "Before You Begin" on page 9.

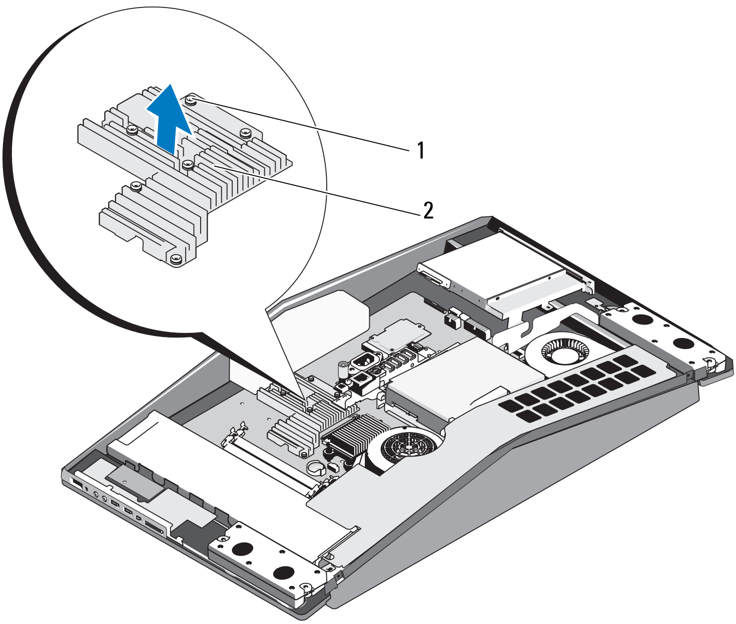
2 Remove the computer cover (see "Replacing the Computer Cover" on page 11).

3 Remove the stand (see "Replacing the Stand" on page 13).

4 Use the marked sequence on the graphics card heat sink, to loosen the six captive screws securing the graphics card heat sink.

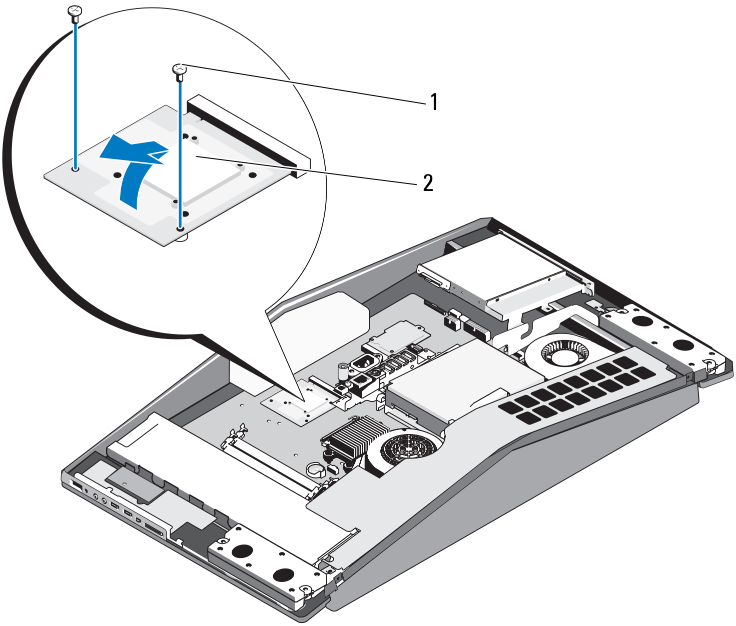
NOTICE: To ensure maximum cooling for the graphics card, do not touch the heat transfer areas on the graphics card heat sink. The oils in your skin can reduce the heat transfer capability of the thermal pads.

5 Lift the graphics card heat sink away from the computer.



1	captive screws (6)	2	graphics card heat sink

6 Remove the two screws securing the graphics card and lift it out of the system board connector.



1	screws (2)	2	graphics card

7 To replace the graphics card, align the notch on the graphics card with the tab in the connector slot.

8 Replace the two screws that secures the graphics card.

NOTICE: To prevent damage to the graphics card, follow the marked sequence on the graphics card heat sink to tighten the captive screws.

9 Align and tighten the six captive screws that secure the graphics card heat sink.

10 Replace the stand (see "Replacing the Stand" on page 13).

11 Replace the computer cover (see "Replacing the Computer Cover" on page 11).

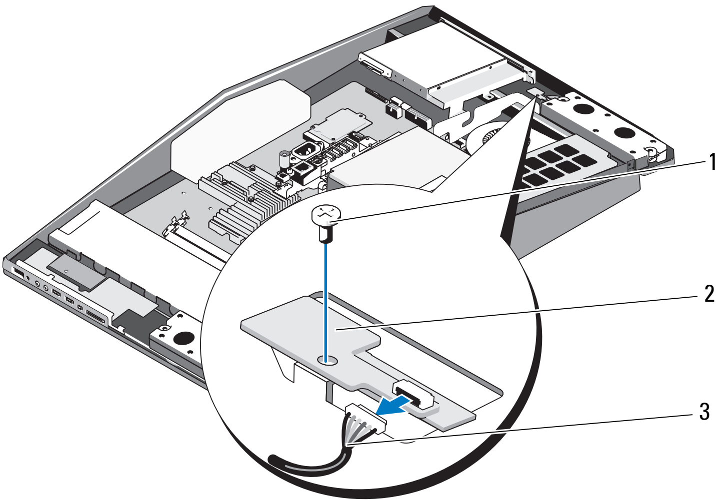
Replacing the Internal Card With Bluetooth® Wireless Technology

CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

1 Follow the procedures in "Before You Begin" on page 9.

2 Remove the computer cover (see "Replacing the Computer Cover" on page 11).

3 Disconnect the card cable and remove the screw securing the card.



1	screw	2	internal card with Bluetooth wireless technology
3	card cable		

4 To install a new internal card with Bluetooth wireless technology, align the screw hole on the card with the screw hole on the chassis.

5 Replace the screw that secures the card and connect the card cable to the card.

6 Replace the computer cover (see "Replacing the Computer Cover" on page 11).

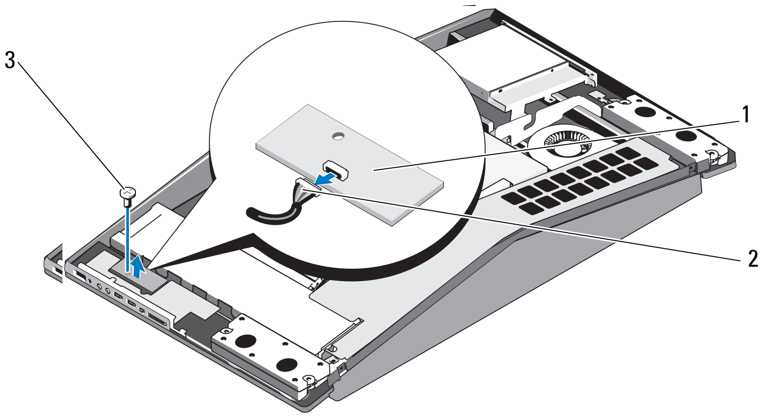
Replacing the RF Module

CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

1 Follow the procedures in "Before You Begin" on page 9.

2 Remove the computer cover (see "Replacing the Computer Cover" on page 11).

3 Remove the screw securing the radio frequency (RF) module, flip the module and disconnect the RF module cable.



1	RF module	2	RF module cable
3	screw		

4 To install the RF module, connect the RF module cable.

5 Flip the RF module and align the screw hole on the RF module with the screw hole on the chassis.

6 Replace the screw that secures the RF module.

7 Replace the computer cover (see "Replacing the Computer Cover" on page 11).

9

Replacing the Processor Heat Sink Assembly

CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

NOTICE: Do not perform the following steps unless you are familiar with hardware removal and replacement. Performing these steps incorrectly could damage your system board. For technical service information, see the *Setup Guide*.

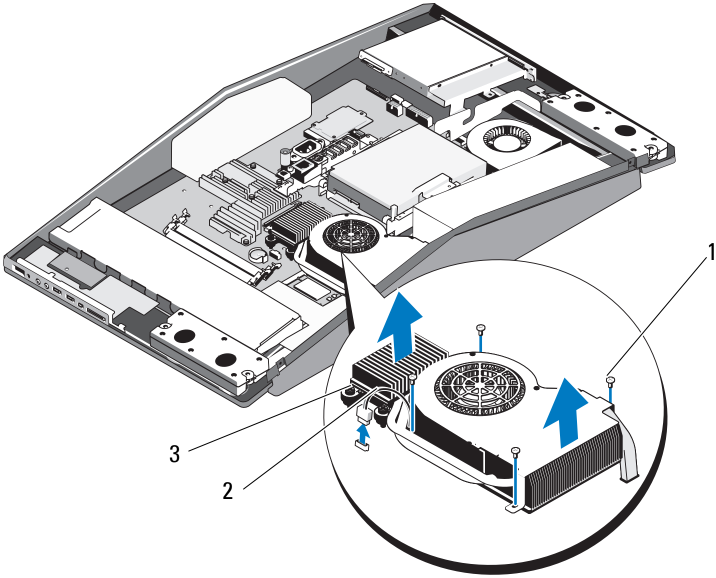
1. Follow the procedures in "Before You Begin" on page 9.
2. Remove the computer cover (see "Replacing the Computer Cover" on page 11).
3. Remove the top shield (see "Replacing the Top Shield" on page 15).

CAUTION: The heat sink assembly may be very hot during normal operation. Be sure that it has had sufficient time to cool before you touch it.

4. Disconnect the processor fan cable from the CPU FAN connector on the system board.
5. Use the marked sequence to loosen the four captive screws at the lower end of the processor heat sink assembly.
6. Remove the five screws securing the top end of the processor heat sink.

NOTICE: To ensure maximum cooling for the processor, do not touch the heat transfer areas on the processor heat sink. The oils in your skin can reduce the heat transfer capability of the thermal pads.

7 Carefully lift the processor heat sink away from the computer.



1	screws (4)	2	processor fan cable
3	captive screws (4)		

NOTICE: Incorrect alignment of the processor heat sink can cause damage to the system board and processor.

8 To replace the processor heat sink assembly, align the screw holes on the processor heat sink assembly with the holes on the chassis.

9 Replace the five screws that secure the top end of the processor heat sink assembly.

NOTICE: To prevent damage to the processor follow the marked sequence, this ensures equal pressure on the processor at all times.

10 Use the marked sequence on the processor heat sink to tighten the four captive screws at the lower end of the processor heat sink assembly.

11 Connect the processor fan cable to the CPU FAN connector on the system board.

12 Replace the top shield (see "Replacing the Top Shield" on page 15).

13 Replace the computer cover (see "Replacing the Computer Cover" on page 11).

10

Replacing the Processor

CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

NOTICE: Do not perform the following steps unless you are familiar with hardware removal and replacement. Performing these steps incorrectly could damage your system board. For technical service information, see the *Setup Guide*.

1 Follow the procedures in "Before You Begin" on page 9.

2 Remove the computer cover (see "Replacing the Computer Cover" on page 11).

3 Remove the top shield (see "Replacing the Top Shield" on page 15).

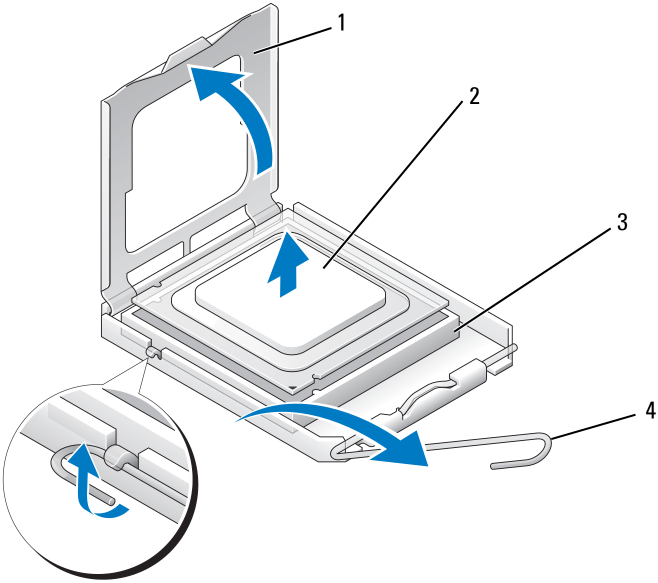
CAUTION: The heat sink assembly may be very hot during normal operation. Be sure that it has had sufficient time to cool before you touch it.

4 Remove the processor heat sink assembly (see "Replacing the Processor Heat Sink Assembly" on page 33).

   NOTE: Unless a new heat sink assembly is required for the new processor, reuse the original heat sink assembly when you replace the processor.

5 Press and push the release lever down and out to release it from the tab that secures it.

6 Open the processor cover.



1	processor cover	2	processor
3	processor socket	4	release lever

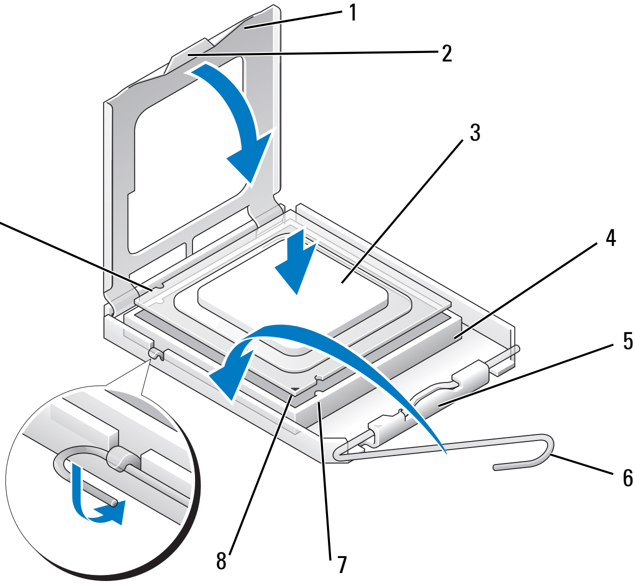
NOTICE: When removing or replacing the processor, do not touch any of the pins inside the socket or allow any objects to fall on the pins in the socket.

7 Lift up the processor to remove it from the socket, place it aside in a safe and secure place.

Leave the release lever extended in the release position so that the socket is ready for the new processor.

NOTICE: Ground yourself by touching an unpainted metal surface on the back of the computer.

8 Unpack the new processor.



1	processor cover	2	tab
3	processor	4	processor socket
5	center cover latch	6	release lever
7	front alignment notch	8	processor pin-1 indicator
9	rear alignment notch		

9 If the release lever on the socket is not fully extended, move it to that position.

NOTICE: Socket pins are delicate. To avoid damage, ensure that the processor is aligned properly with the socket, and do not use excessive force when you install the processor. Be careful not to touch or bend the pins on the system board.

NOTICE: You must position the processor correctly in the socket to avoid permanent damage to the processor.

10 Orient the front and rear alignment notches on the processor with the front and rear alignment notches on the socket.

11 Align the pin-1 corners of the processor and socket.

12 Place the processor lightly in the socket and ensure that the processor is positioned correctly.

13 When the processor is fully seated in the socket, close the processor cover.

Ensure that the tab on the processor cover is positioned underneath the center cover latch on the socket.

14 Pivot the socket release lever back towards the socket, and snap it into place to secure the processor.

15 Clean the thermal grease from the bottom of the heat sink.

NOTICE: Ensure that you apply new thermal grease. New thermal grease is critical for ensuring adequate thermal bonding, which is a requirement for optimal processor operation.

16 Apply the new thermal grease to the top of the processor.

NOTICE: Ensure that the processor heat sink assembly is correctly seated and secure.

17 Replace the processor heat sink assembly (see "Replacing the Processor Heat Sink Assembly" on page 33).

18 Replace the top shield (see "Replacing the Top Shield" on page 15).

19 Replace the computer cover (see "Replacing the Computer Cover" on page 11).

20 Connect your computer and all attached devices to electrical outlets, and then turn them on.

11

Replacing the Battery

CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

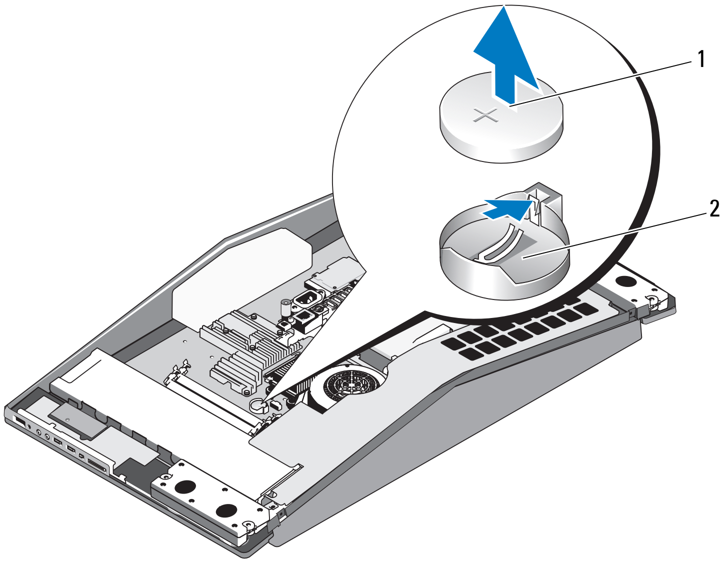
CAUTION: A new battery can explode if it is incorrectly installed. Replace the battery only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

1. Record all the screens in system setup (see "System Setup" on page 43) so that you can restore the correct settings in step 10.
2. Follow the procedures in "Before You Begin" on page 9.
3. Remove the computer cover (see "Replacing the Computer Cover" on page 11).
4. Locate the battery socket on the system board near the memory modules.

NOTICE: If you pry the battery out of its socket with a blunt object, be careful not to touch the system board with the object. Ensure that the object is inserted between the battery and the socket before you attempt to pry out the battery. Otherwise, you may damage the system board by prying off the socket or by breaking circuit traces on the system board.

5. Carefully press the battery release lever away from the battery and the battery will pop out.

6 Remove the battery from the system and properly dispose of the battery.



1	coin-cell battery	2	battery socket

7 Insert the new battery into the socket with the side labeled "+" facing up and then snap the battery into place.

8 Replace the computer cover (see "Replacing the Computer Cover" on page 11).

9 Connect your computer and devices to electrical outlets, and then turn them on.

10 Enter system setup (see "System Setup" on page 43) and restore the settings you recorded in step 1.

12

System Setup

Overview

Use System Setup to:

- change the system configuration information after you add, change, or remove any hardware in your computer.
- set or change a user-selectable option such as the user password.
- read the current amount of memory or set the type of hard drive installed.

Before you use System Setup, it is recommended that you write down the system setup screen information for future reference.

NOTICE: Do not change the settings in system setup unless you are an expert computer user. Certain changes can cause your computer to work incorrectly.

Entering System Setup

1 Turn on (or restart) your computer.

2 When the DELL logo appears, press <F2> immediately.

   NOTE: Keyboard failure may result when a key on the keyboard is held down for extended periods of time. To avoid possible keyboard failure, press and release <F2> in even intervals until the system setup screen appears.

   If you wait too long and the operating system logo appears, continue to wait until you see the Microsoft® Windows® desktop, then shut down your computer and try again.

System Setup Screens

The System Setup screen displays current or changeable configuration information for your computer. Information on the screen is divided into five areas: the menu field, the options list, the active options field, the help field, and key functions.

<table>
<tr><td colspan="3">Menu — Appears on top of the System Setup window. This field provides a menu to access to the System Setup options. Press <←> and<→>keys to navigate. As a Menu option is highlighted, the Options List, lists the options that define the hardware installed on you computer.</td></tr>
<tr><td>Options List — Appears on the left side of the System Setup window. The field lists features that define the configuration of your computer, including installed hardware, power conservation, and security features.

Scroll up and down the list with the up- and down-arrow keys. As an option is highlighted, the Options Field displays the option’s current and available settings.</td><td>Options Field — Appears on the right side of Options List and contains information about each option listed in the Options List. In this field you can view information about your computer and make changes to your current settings.

Press <Enter> to make changes to your current settings. Press <ESC> to return to the Options List.

NOTE: Not all settings listed in the Options Field are changeable.</td><td>Help — Appears on the right side of the System Setup window and contains help information about the option selected in Options List.</td></tr>
<tr><td colspan="3">Key Functions — Appears below the Options Field and lists keys and their functions within the active system setup field.</td></tr>
</table>

System Setup Options

NOTE: Depending on your computer and installed devices, the items listed in this section may, or may not appear exactly as listed.

Main	
`System Date`	Displays current date in the mm:dd:yy format.
`System Time`	Displays the time in the hh:mm:ss format.
`SATA 0`	Displays the SATA 0 drive integrated in the system.
`SATA 1`	Displays the SATA 1 drive integrated in the system.
`HDD S.M.A.R.T Capability`	Allows you to enable or disable the integrated hard drive errors to be reported during system startup. The factory default setting is **Disabled**.
`System Info`	Displays the BIOS version number and date, system model name and the service tag of the computer.
`Memory Info`	Indicates amount of installed memory, usable memory, memory speed, memory channel mode (dual or single), and the type of memory technology used.
`ME-HECI`	Allows you to enable or disable the management engine.

Advanced	
`CPU Type`	Displays the processor type.
`CPU Speed`	Displays the processor speed.
`Cache L1`	Displays the processor L1 cache size.
`Cache L2`	Displays the processor L2 cache size.
`Advanced Chipset Features`	Displays the video memory size.
`Integrated Peripherals`	Allows you to enable or disable these integrated devices: **HD Audio**, **Onboard LAN connector**, and **Onboard LAN Boot ROM**. **Serial ATA Configuration** can be set to IDE or AHCI mode.
`CPU Configuration`	Allows you to enable or disable the CPU features that enhance the performance of the system.

USB Configuration	Allows you to enable or disable the USB controller.

Power	
Power Management Setup	
ACPI Suspend Type	Specifies the ACPI suspend type. The default is S3.
Remote Wake Up	Allows you to set the network interface controller to on or off. This option allows the computer to turn on when a network interface controller receives a wake up signal. The factory default setting is **Off**.
Auto Power On	Allows you to enable or disable an alarm to turn on the computer automatically.
AC Recovery	Specifies the behavior of the system after recovering from a power loss. • Power on — The computer turns on after it recovers from a power failure. • Power off — The computer remains turned off. • Last state — The computer returns the power state it was in before the power failure.
Device Detect Error	Allows you to enable or disable the device error report.

Boot	
Boot Device Priority	Sets the boot priority among the available devices.
Hard Disk Boot Priority	Sets the hard drive boot priority. The items displayed are dynamically updated according to the hard drives detected.
CD/DVD Boot Priority	Sets the optical drive boot priority. The items displayed are dynamically updated according to the optical drives detected.

`Boot Settings Configuration`	Allows the BIOS to skip certain tests while booting. This decreases the time needed to boot the system.
`Security`	Allows you to set or change the supervisor password.
`Device Detect Error`	Allows you to enable or disable the device error report.

Exit	
`Exit Options`	Provides options to **Save Changes and Exit**, **Discard Changes and Exit**, **Load Optimal Defaults**, and **Discard Changes**.

Boot Sequence

This feature allows you to change the boot sequence for the bootable devices installed on your computer.

Option Settings

- **Hard Drive** — The computer attempts to boot from the primary hard drive. If no operating system is on the drive, the computer attempts to boot from the next bootable device in the boot sequence.
- **CD Drive** — The computer attempts to boot from the CD drive. If no CD is in the drive, or if the CD has no operating system, the computer attempts to boot from the next bootable device in the boot sequence.
- **USB Flash Device —** The computer attempts to boot from the USB drive. If no USB is in the drive the computer attempts to boot from the next bootable device in the boot sequence.

NOTE: To boot to a USB device, the device must be bootable. To ensure that your device is bootable, check the device documentation.

NOTE: An error message is generated only after the computer attempts to boot from every device in the boot sequence and no operating system is found.

Changing Boot Sequence for the Current Boot

For example, you can use this feature to boot your computer from the CD drive so that you can run the Dell Diagnostics from the *Driver and Utilities* media and then from the hard drive when the diagnostic tests are complete. You can also use this feature to boot your computer to a USB device such as a memory key, or optical drive.

1. If you are booting to a USB device, connect the USB device to a USB connector.
2. Turn on (or restart) your computer.
3. When the DELL logo appears, press <F12> immediately.

   NOTE: Keyboard failure may result when a key on the keyboard is held down for an extended period of time. To avoid possible keyboard failure, press and release <F12> in even intervals until the **Boot Device Menu** appears.

   If you wait too long and the operating system logo appears, continue to wait until you see the Microsoft Windows desktop, then shut down your computer and try again.

4. At the **Boot Device Menu**, use the up- and down-arrow keys or press the appropriate number on the keyboard to highlight the device that is to be used for the current boot only, and then press <Enter>.

   For example, if you are booting to a USB memory key, highlight **USB Flash Device** and press <Enter>.

NOTE: To boot to a USB device, the device must be bootable. To ensure that your device is bootable, check the device documentation.

Changing Boot Sequence for Future Boots

1. Enter system setup (see "Entering System Setup" on page 43).
2. Use the arrow keys to highlight the **Boot Sequence** menu option and press <Enter> to access the menu.

   NOTE: Make a note of your current boot sequence in case you want to restore it.

3. Press the up- and down-arrow keys to move through the list of devices.
4. Press the spacebar to enable or disable a device.
5. Press plus (+) or minus (–) to move a selected device up or down the list.

Clearing CMOS Settings

⚠ **CAUTION: Before you begin any of the procedures in this section, follow the safety instructions that shipped with your computer.**

⚠ **CAUTION: The computer must be disconnected from electrical outlet to clear the CMOS setting.**

1. Follow the procedure in "Before You Begin" on page 9.
2. Remove the computer cover (see "Replacing the Computer Cover" on page 11).
3. Locate the 2-pin CMOS jumper on the system board.
4. Move the 2-pin jumper plug from pins 3 and 2 to pins 1 and 2.
5. Wait for five seconds for the CMOS to clear.
6. Move the 2-pin jumper plug back to pins 3 and 2.

   NOTE: The computer will not turn on if you do not replace the 2-pin jumper on pins 3 and 2.
7. Replace the computer cover (see "Replacing the Computer Cover" on page 11).
8. Turn on the computer.
9. The message `CMOS settings wrong` appears on the screen. Restart the computer.

   The message `CMOS checksum error. Press F1 to run setup. Press F2 to load default values and continue` appears on the screen.
10. Press <F2> to load default values and continue.